

**IN THE CLAIMS:**

Please cancel claim 4, amend claims 1 and 3, and add new claims 7 to 11 as follows:

1. (Amended) An electromagnetic motor, comprising:

an outer housing having a central axis and opposite end walls;

a shaft rotatably mounted in the housing to extend along the central axis and projecting out through one end wall of the housing;

a plurality of electromagnets extending parallel to the shaft and mounted at spaced intervals around the entire circumference of an annular ring centered on the central axis and spaced radially outwardly from the shaft, each electromagnet being located diametrically opposite to another electromagnet in the ring such that the electromagnets are arranged in diametrically opposed pairs;

a single, elongate, linear rotor member of ferromagnetic material secured to the shaft and projecting radially outwardly from the shaft in two opposite directions to extend up to the annular ring of electromagnets, the rotor having only two opposite ends located adjacent the ring of electromagnets, whereby the rotor ends are located adjacent only two diametrically opposed electromagnets at any time as the rotor rotates;

a power supply; and

a switching assembly for connecting the power supply to successive pairs of diametrically opposed electromagnets in order to activate each pair of diametrically opposed electromagnets in sequence around the ring, such that the opposite ends of the rotor are attracted to successive activated opposed pairs of electromagnets in turn around the ring, and power is supplied to only one pair of diametrically opposed

electromagnets at any one time, whereby the rotor and shaft are rotated in a predetermined direction.

3. (Amended) An electromagnetic motor, comprising:

an outer housing having a central axis and opposite end walls;

a shaft rotatably mounted in the housing to extend along the central axis and projecting out through one end wall of the housing;

a plurality of electromagnets extending parallel to the shaft and mounted at spaced intervals around the entire circumference of an annular ring centered on the central axis and spaced radially outwardly from the shaft, each electromagnet being located diametrically opposite to another electromagnet in the ring, whereby the electro-magnets are arranged in diametrically opposed pairs;

a single, elongate, linear rotor member of ferromagnetic material secured to the shaft and projecting radially outwardly from the shaft in two opposite directions to extend up to the annular ring of electromagnets, the rotor having only two opposite ends located adjacent the ring of electromagnets, whereby the rotor ends are located adjacent only two diametrically opposed electromagnets at any time as the rotor rotates;

a power supply;

a switching assembly for connecting the power supply to successive pairs of diametrically opposed electromagnets in order to activate each pair of diametrically opposed electromagnets in sequence around the ring, the switching assembly connecting power to only one pair of diametrically opposed electromagnets at any one time, such that the opposite ends of the rotor are attracted to successive activated opposed pairs of electromagnets in turn around the ring, whereby the rotor and shaft are rotated in a predetermined direction; and

the switch assembly comprising a plurality of electrical contacts equal in number to the number of electromagnets, the contacts being arranged in the housing in an annular ring centered on the central axis, the contacts being positioned in diametrically opposed pairs, and a linear, elongate contact wiper secured to the shaft and extending radially in opposite directions from the shaft so as to successively contact each pair of diametrically opposed contacts around the ring in sequence as the shaft rotates, each opposing pair of contacts being electrically connected to a respective opposing pair of electromagnets in a respective circuit separate from all other circuits in the switch assembly, and the wiper being connected to the power supply, whereby diametrically opposed pairs of electromagnets are activated in sequence around the ring in order to attract the rotor member to the next successive adjacent opposed pair of electromagnets in turn around the ring.

7. The apparatus as claimed in claim 3, including a switch housing enclosing the switching assembly, the switch housing being mounted at one end of said outer housing, said one end having a central opening, and said shaft extending through said central opening into said switch housing for connection to said contact wiper.

8. The apparatus as claimed in claim 3, wherein the switch assembly is mounted at a location spaced axially from said electromagnets, and each pair of diametrically opposed contacts is at a corresponding angular position to a corresponding pair of diametrically opposed electromagnets.

9. The apparatus as claimed in claim 8, wherein each pair of diametrically opposed contacts is electrically connected to the next adjacent pair of diametrically opposed electromagnets in the sequence around the ring to the corresponding pair of

diametrically opposed electromagnets, whereby contact of the contact wiper with a respective pair of diametrically opposed contacts connects power to said next pair of diametrically opposed electromagnets such that the shaft and rotor rotate to position the rotor at said next pair of diametrically opposed electromagnets and the wiper member is rotated to the next successive pair of diametrically opposed contacts.

10. The apparatus as claimed in claim 3, wherein the switching assembly is arranged to connect power to successive pairs of aligned electromagnets intermittently, such that power is only drawn when the contact wiper contacts a pair of diametrically opposed contacts and is not drawn as the contact wiper rotates between two adjacent pairs of diametrically opposed contacts.

11. The motor as claimed in claim 1, wherein the electromagnets extend from a first of the housing end walls and terminate short of a second end wall to leave a chamber between the electromagnets and second end wall.